



*(Knowledge for Development)*

## **KIBABII UNIVERSITY**

### **UNIVERSITY EXAMINATIONS 2016/2017 ACADEMIC YEAR**

#### **FIRST YEAR FIRST SEMESTER SUPPLEMENTARY EXAMINATION**

**FOR THE DEGREE OF BACHELOR OF SCIENCE IN BIOLOGY**

**COURSE CODE: SBT 213**

**COURSE TITLE: BOTANICAL TECHNIQUES**

**DATE: 15/09/2017**

**TIME: 11:30 -1:30 P.M**

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#### **INSTRUCTIONS TO CANDIDATES**

Answer Question one (1) and any other two (2) Questions. Question one is compulsory and carries 30 marks, the other Questions carry 20 marks each.

TIME: 3 Hours

This paper consists of 2 printed pages. Please Turn Over



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- Q1 (i) Define the following terms  
a) Magnification  
b) Vital stains  
c) Mordant  
d) Molal solutions  
e) Numerical aperture (5 marks)
- (ii) Write brief notes on  
a) Condenser  
b) Confocal scanning electron microscope  
c) Type specimens  
d) Neutrophilic dyes  
e) Beer-lambert law (5 marks)
- (iii) Distinguish between  
a. Pure and mixed culture  
b. Broth and Agar cultures  
c. Reflected and Incident rays  
d. Scanning Electron Microscope (SEM) and a Confocal Scanning laser Microscope (CSLM)  
e. Fixatives and stains (5 marks)
- (iv) Briefly explain the following techniques used in microbiology  
a) Disinfection  
b) Subculture techniques  
c) Agar plate  
d) Filtration  
e) Dry heat (5 marks)
- (v) Explain the International code of botanical nomenclature (ICBN) (5 marks)
- (vi) Explain how to prepare 5M Solution of HCL. Given that the density of HCL is 1.16g/ml, Purity= 40% and the molecular weight 36.48g/mol. (5 marks)

Q2 Describe the importance of Herbarium in a university. (20 marks)

Q3 As a plant Scientist you have been instructed to find out if a certain plant disease causes abnormal cellular growth. Explain the steps you would take to approve this. (20 marks)

Q4 Describe the process of isolating pure colonies of *Escherichia coli* from contaminated water. (20 marks)

Q5 Discuss the fundamental processes involved in preparing Animal specimens for incorporation in Museum. (20 marks)